



University of Pittsburgh



Department of Veterans Affairs

# Computing and Advanced Technology to Improve the Lives of People with Disabilities and Older Adults

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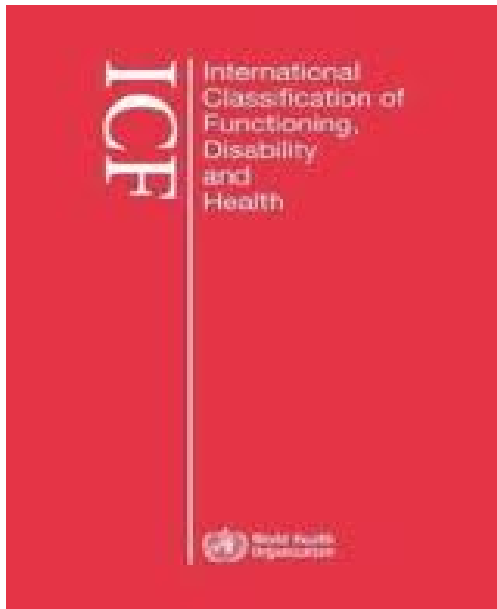
School of Health and Rehabilitation Sciences  
Department of Rehabilitation Science & Technology  
And  
Human Engineering Research Laboratories  
Rehabilitation Research and Development Service





# Empowering People w/ Disabilities

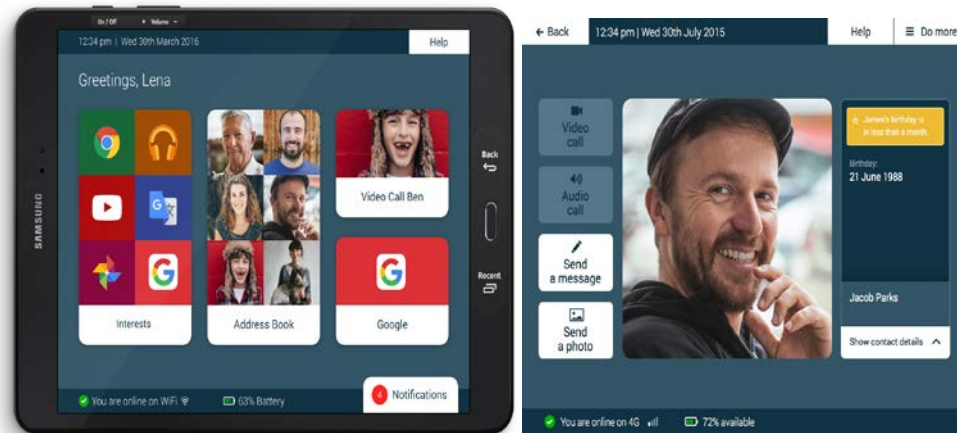
- Ensure human rights for people w/disabilities.
- Provide education and career opportunities for people w/disabilities.
- Create a brighter future.





## Empowerment through Wireless Computing Technologies

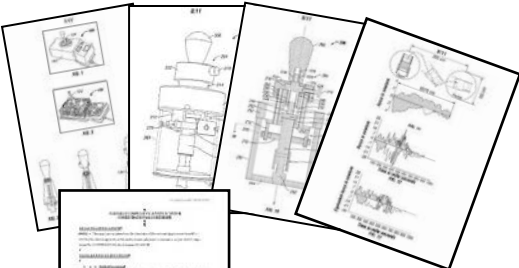
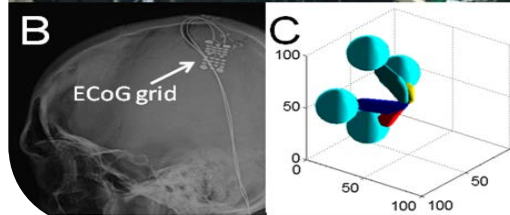
- There may be as many as 100 billion connected IoT devices and a global economic impact of more than \$11 trillion by 2025
- Wireless technologies, especially the emerging Internet of Things (IoT), hold great potential to further improve inclusion of PwD
- Traditionally, PwDs have been required to adapt to their physical environments, learn to use a new assistive device, and seek supports from families, friends, or relevant professionals.



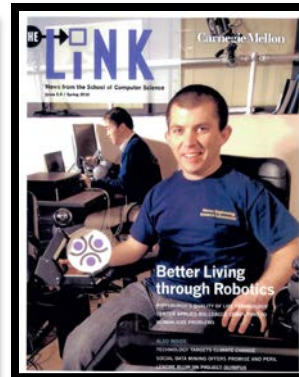
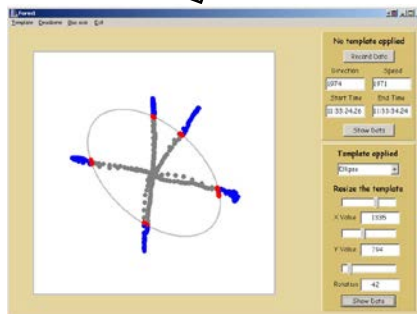




- Computing technology makes things possible for people with disabilities.
- Promote community participation and empowerment to include health, employment, school and family
- Become an extension of the user.



Technical document or manual page.





# Promote Reintegration

# Coaching Healthy Behavior

### EAT-LIVE-PLAY KITCHEN:

The healing powers of healthy food, daily family reunion at the island, laughter and good times. Family life is lived in the kitchen and so this case the kitchen is fully adjustable from side and accessories, to making surfaces and fixtures, the design is a culture of movement, health in the child or someone's attention to the rest of the house — even outside. It's a modern touch to enjoy with a disability if that makes kitchen is not just what their parents, we think it's more like what their experience.



### WIND DOWN FAMILY ROOM:

All nighttime, recessed lighting within the upper wall lights up to become a visual aid to help one navigate the space, coming for a nightlight much has never been seen.

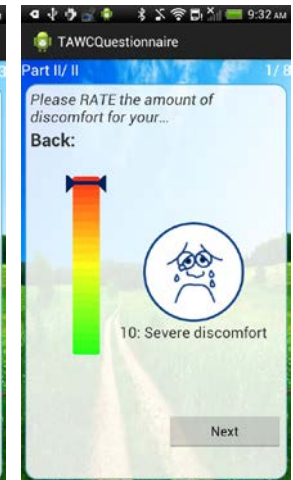
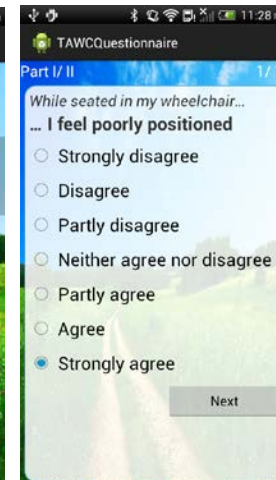
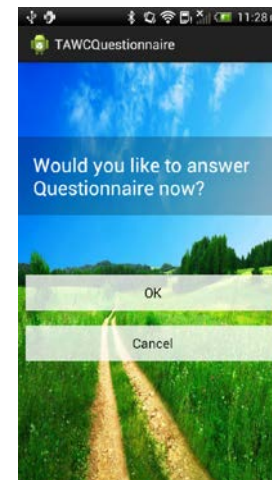


### EAT-LIVE-PLAY KITCHEN:

Adjusted to live height for people in seated position, children and individuals that require frequent rest breaks.



Smartphone-based Virtual Seating Coach







## The IoT Enables Informed Interaction between PwD, Physical Environments, and Their Support Network

- Providers can deliver personalized and relevant information to users anywhere and at a time when it is most effective, and tailor their responses to meet user needs.
- Manufacturers can improve their products by studying how they are used under everyday conditions and obtain previously unavailable insights into their products' performance and use.
- PwD are a highly heterogeneous group with each individual having his or her unique needs, abilities, and resources.
- Through IoT, it is possible to create and provide relevant and personalized services to PwD, potentially driving better user experiences and outcomes.
- “Connected devices, homes, workplaces, communities and *“around me technologies”*”.

